

damp to wet places as a semi-aquatic, but it also occurs as a true aquatic under the conditions described. —STATE UNIVERSITY COLLEGE OF EDUCATION AT GENESEO, N. Y.

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REVISION OF HETEROTHECA, SECTION
HETEROTHECA (COMPOSITAE)

BURDETTE L. WAGENKNECHT

(Concluded)

DISTRIBUTION AND HABITATS: Northwestern Arizona to Sonora and Chihuahua, Mexico and Great Bend National Park, Texas. Sandy soil along small occasional streams, roadside ditches, waste places, in valleys at altitudes of 1,000 to 4,500 feet.

This species is most closely related to *Heterotheca latifolia* Buckl., from which it differs in the more robust habit, the elongate peduncles and the more glandular phyllaries. Specimens placed in this species have at various times been identified as *H. inuloides*, *H. leptoglossa*, *H. grandiflora* and *H. subaxillaris* (sensu *H. latifolia*).

The specific epithet refers to the habitat preference of this species. Apparently undisturbed silt and gravel soils are not colonized by it.

Representative specimens. Texas: Brewster Co.: Santa Helena Canyon, Big Bend National Park, *Moore and Steyermark 3467* (GH, PH, UC). Arizona: Cochise Co.: 8 mi. e. Pearce, *Wagenknecht 4880* (KANU); Graham Co.: 16 mi. s. Safford, *Gould & Haskell 3984* (CU); Pima Co.: 8 mi. n. w. Tucson, *Wagenknecht 4849* (KANU); Pinal Co.: 3 mi. n. w. Coolidge, *Wiggins & Rollins 481* (NY); Yavapai Co.: 10 mi. s. Prescott, *Gillespie 8532* (GH, UC). MEXICO: Chihuahua: Chihuahua, *Pringle 674* (GH, NY, PH, US), Camargo, *White 2289* (GH).

7. *H. latifolia* Buckley, Proc. Acad. Nat. Sci. Phila. 13: 459. 1862

Annual or biennial aromatic herbs 0.5-2 m. (spring form 10-50 cm.) tall, the branching limited to the upper one-third to one-half of stem. Stem striate, velutinous, the velutinous indumentum becoming progressively dense below with spreading hairs up to 4.2 mm. long. Leaves alternate, ovate to elliptical or lanceolate, entire, dentate or serrate, sparsely pilose above, pilose below, the veins prominently raised. Lower leaves 1-7 cm. long, 0.5-4 cm. wide, petiolate (spring form with basal and cauline leaves prominently so), the petioles 1-2.5 cm. long with enlarged auriculate-clasping bases. Cauline leaves 0.3-2.4 cm. wide, 1-3 cm. long, becoming progressively smaller upward, sessile or partly clasping, sparsely toothed to entire. Inflorescence a loosely spreading or divaricate corymbose panicle; terminal involucre 0.8-1.8 cm. (spring form 0.4-0.9 cm.) wide, 4-8 mm. high, campanulate to hemispherical. Phyllaries in 4-6 series, the tips villous, the inner series 4-9 mm. long, glabrous on both surfaces, the margins scarious, the outer series 0.7-2.5 mm. long, sparsely strigose on outer surface and with sessile to capitate glands. Ray flowers 15-35, (spring form 6-25), the corolla tube 2-4 mm. long, the ligules 3-5 mm. long; disk flowers 25-40 (spring form 6-25), the tube 2-3 mm. long. Ray achenes 1.5-3.0 mm. long, trigonous, epappose, glabrous or bearing a few silky hairs on the angles. Disk achenes 2.2-3.2 mm. long, obovate, compressed, densely sericeous. Pappus of two series, the inner series of numerous barbellate bristles, 3.4-6.2 mm. long, reddish brown to white, the outer series squamellate-setaceous or of short barbellate bristles 0.3-0.6 mm. long. Receptacle flat, white, alveolate, the partitions irregularly terminated by unequal chartaceous points.

Heterotheca latifolia was described by Buckley (1861). Gray (1862) after examining the type specimen dismissed the species with the statement, "*Heterotheca latifolia* is *Heterotheca chrysopsidis*." It is interesting that both Buckley's description and Gray's statement were ignored thereafter by authors dealing with this species in various floristic studies. Authors who dealt with this species usually identified it as *H. lamarckii* Cass. as distinguished from the scabrous *H. scabra* (Pursh) DC., which is found along the coasts. Britton and Rusby's transfer of Lamarck's species name to *Heterotheca* was presented in a paper which dealt with a specimen of *H. latifolia* Buckl. and had the result of linking the name *H. subaxillaris* (Lam.) Britton & Rusby to both species. As a result, *H. latifolia* was regarded by all authors as conspecific with *H. subaxillaris*.

The first person to express doubt as to the validity of the above treatment was Harper (1944). He said of *Heterotheca subaxillaris* as delimited at that time, "A variable species,

perhaps divisible into more than one. A prostrate form seems to be native on drifting sands on Dauphin Island, and Dr. Mohr reported it also from similar places in Baldwin County. Taller forms are occasionally seen in sandy waste places in the coastal plain and in recent years one has been quite abundant in and around railroad yards in Birmingham." An examination of his collections reveals that the prostrate form was *H. subaxillaris* var. *procumbens* and the taller forms were *H. latifolia* var. *latifolia*.

Shinners (1951) examined the type specimen of *Heterotheca latifolia* in the Herbarium of the Academy of Natural Sciences in Philadelphia and found it to be identical with the common old-field or waste-ground weed of central and eastern Texas.

Keever (1955), studying succession in abandoned fields of the southeastern states, found that *Erigeron canadensis* L. [*Conyza canadensis* (L.) Conq.], a first-year dominant, was being replaced by a species of *Heterotheca* which was unknown to her. Miss Keever was familiar with *H. subaxillaris* of the coastal areas and was not satisfied with an identification which placed her specimens in this species. Material sent to Dr. Shinners was identified as *H. latifolia*. Keever's investigation established the years 1945-46 as the approximate date of introduction of this species to the Piedmont of Georgia and the Carolinas. The source of these colonies is not given. No positive means of invasion has been definitely established, although the number of labels citing railroad yards as habitats in Mississippi and Alabama would indicate one possible avenue.

The earliest collection of *Heterotheca latifolia* made in Delaware was by Canby (1887). This plant has been misidentified as *H. subaxillaris*. An examination of cited specimens shows that both species occur in Delaware. Tattall's (1946) comments on *H. subaxillaris* are of interest. The habitat description, "Common weed in dry pastures and on roadsides" could apply to either species in this locality, while a further statement, "An introduction from the southern states, spreading rapidly northward," appears to fit more closely the behavior pattern of *H. latifolia*. An ex-

amination of *Tatnall 4902*, identified as *H. subaxillaris*, shows it to be *H. latifolia*. Uttal (1954) reported *H. subaxillaris* on Long Island, but an examination of this specimen shows it to be *H. latifolia*. Uttal postulated the source of the colony as a weed in grass and sod brought to the area from Delaware. From the presence of the species in Delaware as indicated above, one would tend to agree with this theory.

Of interest is the recent invasion of Illinois by this species. Collections from Missouri include the following: *Eggert*, Pine Bluff (1896), *Bush*, Randolph (1927), and *Steyermark*, several collections in southern and eastern Missouri during the middle 1940's. During this period no collections were reported from Illinois, Dobbs (1946) reported the first Illinois collection as follows: "Another plant of very recent introduction in Illinois is *Heterotheca subaxillaris* (Lam.) Britt. & Rusby. This species much resembles *Chrysopsis villosa* (Pursh) Nutt., a psammophilous plant of rather frequent occurrence in Henry County, but may be distinguished from it by the achenes of the ray and disk flowers which are quite dissimilar. It is nearly ubiquitous in the southern states and Mexico, and is spreading northward. On September 17, 1944, a few plants were found along railroad tracks near the village of Green River, and they were still persisting at the time of my last revisit which was on September 9, 1945. Although this region has been botanized rather frequently, no specimens were seen prior to the above dates. Deam does not report it for Indiana, and the writer has not heard of its occurrence elsewhere in Illinois. More time will be needed to determine its exact status in Illinois." Dobbs (1952) is a report of the same record. Bailey (1949) did not include the species in his report. Jones and Fuller (1955) reported, in addition to the Henry County station, a collection from Union County, the latter falling within the area covered by Bailey's paper. Private correspondence with Professor R. H. Mohlenbrock, Southern Illinois University, Carbondale, reveals that a collection was made in Pulaski County, *Mohlenbrock & Voigt 5896*, on June 22, 1955. The specimen was not seen. The well-recorded in-

vasion shows the ability of this species to speedily occupy a new area.

At the southern limits of its range, occasional plants of the species are able to survive mild winters and flower again during the spring and early summer. The appearance of these individuals is quite different from the so-called normal plants which flower in the fall. The earlier the plant flowers, the more it differs from the fall-flowering members of the species. With experience one can estimate fairly accurately the season of collection of a specimen of *Heterotheca latifolia*, even without consulting the collection data. The spring forms are much shorter than the fall ones and become, in extreme cases, rosette forms with a short branching inflorescence; the flowers are smaller and may bear as few as six ray flowers and six disk flowers; all leaves below the inflorescence are characteristically petiolate and the petioles are dilated not at all or only slightly at the base. Benke (1928) described *H. subaxillaris* var. *petiolaris* from a specimen (Benke 4585 F) which he collected on March 12, 1928. This specimen was not studied, but others, cited as being "exactly of the same description", Hall 312, March 16, 1872, and Hays 399, Belknap, Texas, March 30, 1858, were seen. It is interesting to note that with regard to the time of year, these plants were collected within an eighteen day period. Two specimens, "which though somewhat similar do not quite agree with type" are Dixon 71, Huntsville, Texas, June 3-12, and Dixon 217, Riverside, Texas, June 19. These specimens approach more nearly the fall form. Since this variation is due to the time of year in which the plant is collected, var. *petiolaris* is considered here to be a synonym of *H. latifolia* var. *latifolia*.

7a. *H. latifolia* var. *latifolia*

Heterotheca subaxillaris (Lam.) Britt. & Rusby var. *petiolaris* Benke. *Rhodora* 30: 201. 1928.

TIME OF FLOWERING: July to November in Oklahoma, northern Texas, New Jersey and Georgia; March-December in southern parts of range.

TYPE AND TYPE LOCALITY: *Buckley*, Llano County, Texas. (PH).

DISTRIBUTION AND HABITATS: native to Louisiana, Oklahoma, Texas and northern Mexico, introduced from New Jersey south to Georgia west to Alabama. Sandy or disturbed soils in open woods, roadsides, fields, waste ground and along railroads.

Representative specimens. **New Jersey:** Cape May Co.: *Brown* (GH). **Delaware:** Kent Co.: 1 mi. s. Choptank Mills, *Tatnall 4902* (PH). **Maryland:** Talbot Co.: 1 mi. s. w. Easton, *Earle 3715* (PH). **Virginia:** Princess Anne Co.: Cape Henry, *Egler 40-245* (NY). **North Carolina:** Rutherford Co.: 3 mi. e. Forest City, *Channell 2679* (SMU). **South Carolina:** Cherokee Co.: 3 mi. s. w. Gaffney, *Keever* (NY); Edgefield Co.: Clark Hill Dam, *Duncan 9982* (SMU); Marion Co.: bank of Great Pee Dee River, *Leeds 1902* (PH); Spartanburg Co.: 5 mi. w. Chesne, *Fox 5252* (SMU). **Georgia:** Columbia Co.: *Duncan 11779* (CU, OKLA, SMU); Houston Co.: Welston, *Ainsworth 44912.5* (PH). **Alabama:** Elmore Co.: *Justice 243* (CU). Greene Co.: 1.3 mi. n. e. Epes, *Shinners 12717* (SMU); Jefferson Co.: Montgomery, *Harper 3433* (GH, NY, PH, US); Sumter Co.: Sumterville, *Whitehouse 24389* (SMU). **Mississippi:** Adams Co.: *Smith 583* (US); Jefferson Co.: *McDougall 1118* (US). **Missouri:** Stoddard Co.: 3.5 mi. s. w. Pyletown, *Steyermark 66190* (F). **Arkansas:** Columbia Co.: Magnolia, *Demaree 21779* (NY, UC); Desha Co.: Arkansas City, *Demaree 27275* (SMU, TEX); Hempstead Co.: *Moore & Lee 29* (TEX); Pulaski Co.: Arkansas River, *Demaree 8631* (GH, US). **Louisiana:** Allen Parish: Oakdale, *Shinners 22081* (SMU); Bossier Parish: 11.4 mi. e. n. e. Bossier City, *Shinners 21746* (SMU); Caddo Parish: Fort Humug, *Correll & Correll 10087* (GH, NY); Claiborne Parish: 1.4 mi. s. e. Gordon, *Shinners 24560* (SMU); Natchitoches Parish: 2.2 mi. s. s. e. Natchitoches, *Shinners 20007* (SMU); Rapides Parish: *Hale* (F). **Kansas:** Wyandotte Co.: Kansas City, *MacKenzie* (F). **Oklahoma:** Cleveland Co.: 10 mi. e. Norman, *Nelson, Nelson, & Hopkins 781* (UC); Love Co.: 16 mi. e. Marietta, *Shinners 12905* (SMU); McCurtain Co.: 1 mi. s. Torn, *Waterfall 10467* (SMU); Marshall Co.: 0.5 mi. w. Uobs, *Riggs* (SMU); Mays Co.: *Stevens 2583* (GH, NY, US); Murray Co.: Platt. Nat. Park, *Merrill & Hagan 1271* (F, NY); Oklahoma Co.: Oklahoma City, *White 1141* (GH, SMU). **Texas:** Anderson Co.: 3.7 mi. n. Montalba, *Cory 53905* (SMU); Angelina Co.: Lufkin, *Rhoades 55* (CU); Arkansas Co.: Rockport, *Cory 51221* (SMU); Bandera Co.: 10.3 mi. w. n. w. Bandera, *Shinners 16881* (SMU); Bell Co.: 4 mi. w. Belton, *York & York 53050* (SMU); Bexar Co.: Bandera Road, *Schultz 314* (US); Brazos Co.: 3.7 mi. e. Kurten, *Cory 50621* (SMU); Brooks Co.: King Ranch, Encino Division Headquarters, *Gould & Morrow 6760* (SMU); Burnet Co.: 8 mi. w. Burnet, *Turner & Johnson 2477* (TEX); Camp Co.: 1.7 mi. s. w. Newcome, *Shinners 16275* (SMU); Colorado Co.: 5 mi. n. e. Columbus, *Shinners 14614* (SMU); Comal Co.: Comanche Springs, New Braunfels, etc., *Lindheimer 926* (F, GH, MEX, NY, PH, TEX, UC, US); Dallas Co.: Dallas, *Barr 23* (SMU); Denton Co.: Lake Dallas Dam, *McCart 604* (SMU, TEX); Donley Co.: Hedley, *Martin 2901* (US); Fayette Co.: Muldoon, *Ripple 51-728* (TEX); Floyd Co.: Plainview, *Ferris & Cundan 3370* (NY); Freestone Co.: 13 mi. s. Fairfield, *Shinners 12941* (SMU); Galveston Co.: Texas City, *Turner 1733* (SMU); Goliad Co.: Goliad, *Williams 85* (PH); Gregg Co.: Longview, *Shinners 16227* (SMU); Grimes Co.: Plantersville, *Stoneham* (US); Guadalupe Co.: Sequin, *Groth 197* (CU, F, GH, US); Harris Co.:

Houston, *Anderson 36-4* (TEX); Harrison Co.: 11 mi. s. w. Marshall, *Steyermark 52293* (F); Henderson Co.: 2.5 mi. s. e. Eustace, *Shinners 9592* (SMU); Hidalgo Co.: 7 mi. w. Mission, *Uzzell 25* (TEX); Hill Co.: 3.6 mi. s. w. Hinton, *Shinners 12069* (SMU); Hood Co.: 5.5 mi. n. e. Granbury, *Shinners 10332* (SMU); Hopkins Co.: Picton, *Whitehouse 17569* (SMU); Hutchinson Co.: 3 mi. n. Stinnett, *Cory 50326* (SMU); Jackson Co.: 3 mi. s. Vanderbilt, *Tharp & Barkley 13A159* (F, PH, TEX); Jasper Co.: 2.5 mi. s. Jasper, *Shinners 25138* (SMU); Johnson Co.: Cleburne State Park, *Cory 58000* (SMU); Karnes Co.: 2 mi. s. Karnes City, *Johnson 1009* (SMU, TEX); Kaufman Co.: Terrell, *Shinners 10838* (SMU); Kenedy Co.: 3.4 mi. s. Armstrong, *Shinners 17093* (SMU); Knox Co.: 1 mi. n. Goree, *Sumanth 266* (SMU); La Salle Co.: 10.2 mi. n. w. Cotulla, *Shinners 17301* (SMU); Leon Co.: 23 mi. s. w. Buffalo, *Shinners 7138* (SMU); Liberty Co.: 2.8 mi. s. w. Cleveland, *Shinners 25306* (SMU); Limestone Co.: Tehuacana, *Miles* (SMU); Live Oak Co.: 7 mi. w. Three Rivers, *Shinners 16984* (SMU); Llano Co.: *Whitehouse* (TEX); Lubbock Co.: Lubbock, *Reed 3942* (CU, TEX, US); McLennan Co.: Gaphead Road, *Smith 76* (TEX); Montague Co.: 1.3 mi. w. Barnie, *Storm 1123* (SMU); Montgomery Co.: 3 mi. n. w. Conroe, *Shinners 16538* (SMU); Nacogdoches Co.: 4.7 mi. e. Douglas, *Shinners 24883* (SMU); Palo Pinto Co.: 6 mi. w. Palo Pinto, *Anderson & Harty 25* (SMU); Panola Co.: 9 mi. s. Carthage, *Shinners 6703* (SMU); Parker Co.: 1.4 mi. s. s. w. Springtown, *Shinners 16420* (SMU); Presidio Co.: 8 mi. e. Presidio, *Hinckley 1303* (NY, SMU); Red River Co.: 16.2 mi. n. Clarksville, *Whitehouse 20573* (SMU); Robertson Co.: 7 mi. n. e. Hearne, *Shinners 7144* (SMU); San Patricio Co.: 7.5 mi. w. Taft, *Jones 420* (OKLA, SMU); San Saba Co.: 3 mi. s. e. San Saba, *Cory 58285* (SMU); Smith Co.: 1 mi. e. Troup, *Cory 55576* (SMU); Titus Co.: Talco School, *Cato 6481* (TEX); Travis Co.: Austin, *Waldorf* (NY, TEX, UC); Val Verde Co.: Del Rio, *Warnock 853* (CU, TEX); Van Zandt Co.: Willa Point, *Stewart 165* (SMU); Walker Co.: Huntsville, *Whitehouse 6649* (TEX); Waller Co.: Hempstead, *Lundell & Lundell 11019* (SMU); Wise Co.: 12.7 mi. w. Rhome, *Whitehouse 19221* (SMU); Young Co.: 3 mi. s. w. Newcastle, *Woolfolk 8* (SMU). **New Mexico:** Quay Co.: Nara Visa, *Fisher 49* (US). **Arizona:** Cochise Co.: *Shinners 17392* (SMU); Maricopa Co.: Salt River, *Butler 48* (TEX); Pima Co.: Tucson, *Wiggins 6228* (US). **MEXICO:** **Nuevo León:** Monterrey, *Kenoyer 1094* (SMU). **Coahuila:** Saltillo, *Fisher 4* (F). **Sonora:** Hermosillo, *Rose, Standley & Russell 12497* (NY, US). **Sinaloa:** Fuerte, *Rose, Standley & Russell 13437* (US). **BRAZIL:** **Rio Grand de Sul:** Porto Alegre, *Renick* (GH).

7b. *H. latifolia* var. *macgregoris* var. nov.

Folia oblongo-lanceolata, remote serrata, in ambitu pilosa. Involucra plus quam 0.9 cm. lata.

Leaves oblong-lanceolate, remotely serrate, upper and lower leaf surfaces pilose. Involucres more than 0.9 cm. in width.

TIME OF FLOWERING: July to October.

TYPE AND TYPE LOCALITY: *R. L. McGregor 5163*, dry sandy prairie,

Morton County, Kansas. Deposited in the Herbarium of the University of Kansas (KANU).

DISTRIBUTION AND HABITATS: Kansas, Oklahoma, northern Texas, southeastern Colorado, New Mexico, and Arizona; introduced to New York; New Jersey and Delaware. Sandy soils along streams, in prairies, overgrazed pastures and roadsides, at altitudes of 800 to 1,500 feet.

It gives me great pleasure to name this variety in honor of Professor R. L. McGregor, whose counsel and guidance were of inestimable value in connection with the present study.

Representative specimens. **New York:** Suffolk Co.: La Guardia Field, *Uttal* (NY). **New Jersey:** Cumberland Co.: 1 mi. n. Leesburg, *Blake 11958* (GH, US). **Delaware:** Sussex Co.: Slaughter Beach, *Larsen 1080* (PH). **Illinois:** Henry Co.: Sect. 7, Edford Township, *Dobbs* (GH). **Kansas:** Barber Co.: 6 mi. n. Medicine Lodge, *Wagenknecht 4617* (KANU); Barton Co.: 6 mi. s. w. Great Bend, *Wagenknecht 4585* (KANU); Clark Co.: 4 mi. w. Ashland, *Wagenknecht 4677* (KANU); Comanche Co.: 1 mi. s. Coldwater, *Wagenknecht 4640* (KANU); Douglas Co.: *McGregor 359* (KANU); Finney Co.: *Kellerman* (PH); Harper Co.: 2 mi. e. Harper, *McGregor 13752* (KANU); Kiowa Co.: 3 mi. w. Greenburgh, *McGregor 4040* (KANU); Meade Co.: Meade Co. State Park, *Horr 3686* (KANU); Morton Co.: 9 mi. n. Elkhart, *McGregor 5163* (KANU); Ottawa Co.: 3 mi. s. Minneapolis, *Horr E585* (KANU, OKLA, SMU, UC, US); Reno Co.: Medora sand dunes, *Gates 21911* (TEX, US); Rice Co.: 3 mi. e. Raymond, *Wagenknecht 4419* (KANU); Rooks Co.: Rockport, *Bartholomew* (NY); Saline Co.: Brookville, *Gates 20619* (F, NY, PH); Sedgwick Co.: near Wichita, *Branch 78* (CU); Seward Co.: 25 mi. s. w. Meade, *Fearing & Latham* (US); Stafford Co.: 8 mi. n. e. Hudson, *McGregor 13694* (KANU). **Oklahoma:** Beckham Co.: Red River, *Eskew 1515* (PH); Caddo Co.: 3 mi. w. Andarko, *Nelson, Nelson & Hopkins 894* (UC); Cleveland Co.: 4 mi. w. Norman, *Nelson, Nelson, & Hopkins 748* (OKLA, SMU); Comanche Co.: Fort Sill, *Clemens 11,810* (GH, NY); Custer Co.: Weatherford, *Waterfall 751* (GH, NY); Ellis Co.: 4.5 mi. s. Arnett, *Nelson, Nelson & Goodman 5335* (SMU, TEX); Kay Co.: *Keyser 6082* (NY); Pawnee Co.: Cleveland, *Palmer 6383* (CU, US); Payne Co.: 1 mi. s. Perkins, *Atkins 35* (SMU); Woods Co.: Alva, *Stevens 2841* (GH, US); Woodward Co.: *Lock 47* (US). **Texas:** Bailey Co.: Coyote Lake, *Ferris & Duncan 3441* (NY); Clay Co.: Henrietta, *Whitehouse 10832* (SMU); Coke Co.: *Cory 5303* (GH); Hardeman Co.: 7.2 mi. n. Quansh, *Whitehouse 10755* (SMU); Hemphill Co.: *Carleton 538* (F, NEB, US); Mitchell Co.: Colorado City, *Pohl 4300* (SMU); Taylor Co.: *Tolstead 7526* (SMU, TEX, UC); Ward Co.: *Pennell 19357* (PH); Wheeler Co.: 3.5 mi. n. Shamrock, *Cory 50244* (SMU); Winkler Co.: 2 mi. n. Winkler, *Warnock & Parks 8799* (SMU). **Colorado:** Baca Co.: Sandy flats, Cimarron River, *Weber 5165* (SMU). **New Mexico:** Eddy Co.: 5 mi. n. e. Carlsbad, *Albers 46292* (TEX); Chavez Co.: 7 mi. n. e. Boaz, *Waterfall 4322* (GH). **Arizona:** Pima Co.: Tucson, *Ginter*, (US).

7c. *H. latifolia* var. *arkansana* var. nov.

Folia ovata vel lanceolata, serrata, in ambitu pilosa, rami laterales divaricati.

Leaves ovate to lanceolate, coarsely serrate, upper and lower surfaces pilose. Lateral branches widely spreading.

TIME OF FLOWERING: July to November.

TYPE AND TYPE LOCALITY: *D. M. Moore 30142*, Magazine Mountain, Logan County, Arkansas. Deposited in the Herbarium of the University of Texas (TEX).

DISTRIBUTION AND HABITATS: Southern Missouri, Arkansas, eastern Oklahoma, eastern Texas, and introduced to Maryland. Sandy or rocky ground in pastures and along roadsides at altitudes of 600 to 2,000 feet.

Representative specimens. **Maryland:** Wicomico Co.: Quantico, *Tidestrom 7417* (US). **Missouri:** Butler Co.: Batesville, *Steyermark 74503* (F); St. Louis Co.: St. Louis, *Muhlenback 756* (F). **Arkansas:** Desha Co.: Fayetteville, *Moore 480643* (TEX); Jefferson Co.: Pine Bluff, *Demaree 16243* (F); Montgomery Co.: Caddo River bottoms, *Demaree 9585* (NY); Pike Co.: Little Missouri River bottoms, *Demaree 9678* (NY); Pulaski Co.: Little Rock, *Demaree 22362* (NY, UC). **Oklahoma:** Cherokee Co.: 6.7 mi. n. e. Tahlequah, *Wallis 5981* (SMU). **Texas:** Bowie Co.: Texarkana, *Heller & Heller 4092* (CU, F, GH, NEB, NY, PH, TEX, UC, US).

EXCLUDED SPECIES

Heterotheca deltoidea Klatt. Ann. K. K. Natur. Hoff. 9: 258. 1894.

An examination of a fragment of the type (F) and photographs of the type (F, US), prove this species to be a member of a genus not known to the author.

Heterotheca grievii Benson. Bot. Gaz. 74(2): 121. 1922.

This species is a microsporangiate organ genus attributed to *Heterangium grievii*, a paleobotanical genus of Lower Carboniferous Pteridosperm Stems, and not a member of the group under investigation.

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